



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/383,789	08/26/1999	BENJAMIN LEE HUGHES	X-12013	7041

25885 7590 05/23/2003

ELI LILLY AND COMPANY  
PATENT DIVISION  
P.O. BOX 6288  
INDIANAPOLIS, IN 46206-6288

EXAMINER

LUKTON, DAVID

ART UNIT	PAPER NUMBER
----------	--------------

1653

DATE MAILED: 05/23/2003

21

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

Applicant(s)

09/383,789

HUGHES ET AL.

Examiner

Art Unit

David Lukton

1653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 April 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 123-126, 128-132, 134-140, 142 and 184-194 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 123-126, 128-132, 134-140 and 142 is/are allowed.
- 6) ☒ Claim(s) 184-194 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

Pursuant to the directives of paper No. 23 (filed 4/1/03), claims 127, 144-153, 155-161, 163, 165-172, 174-180, 182 have been canceled. Claims 123-126, 128-132, 134-140, 142, 184-194 are now pending.

Applicants' arguments filed 4/1/03 have been considered and found persuasive in part. The previously imposed §112, first paragraph rejection is withdrawn. The §112, second paragraph rejection is withdrawn as applied against all claims except for claims 184-194. The §103 rejection over claims 123-126, 128-132, 134-140, 142 is withdrawn.

\*

Claims 184-194 are rejected under 35 U.S.C. §112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 184 recites that position 8 of the GLP-1 peptide contains a valine, glycine or methylalanine residue. However, the meaning of "position 8" is ambiguous. Normally, in the absence of any indication to the contrary, one would expect that position "1" is the N-terminal residue, and that position 8 is the amino acid which is seven residues removed from the N-terminal residue. However, in the instant case, applicants have, throughout the specification and remaining claims, designated the N-terminal residue as being position 7, rather than position 1. There is nothing inherently "wrong" with designating the N-terminal residue as being position 7, as long as it is made clear. However, claim 184 does not make this clear. Thus, the N-terminal residue in claim 184 might be designated position 1, it might be designated as position 7, or it could be something else. The claim should be amended to make clear what the counting system is. In response to the foregoing, no argument has been provided. Accordingly, the rejection is maintained without further comment.

\*

The following is a quotation of 35 USC §103 which forms the basis for all obviousness rejections set forth in the Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made, absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103.

Claims 184-187 are rejected under 35 U.S.C. §103 as being unpatentable over Drucker (USP 5846937) in view of Galloway (USP 5705483); or Smith (USP 5908830) in view of Galloway; or Knudsen (WO 98/20895) in view of Galloway; or Danley (EP 0,619,322) in view of Galloway; or Kirk (WO 93/18785) in view of Galloway (USP 5705483).

As indicated previously, Smith teaches (col 9, line 14 and col 19, line 53) the use of a GLP-1 agonist which can be administered (col 11, line 58) by pulmonary means. Drucker teaches (col 8, line 50; col 9, line 31) administration of one or more GLP analogs by pulmonary means. Knudsen teaches (p. 8, line 25) administration of GLP peptides by

pulmonary means. Danley teaches (p. 4, line 32) administration of GLP by pulmonary means. Kirk (WO 93/18785) teaches nasal administration of GLP peptides. None of these teach the specific GLP peptide to which the instant claims are drawn.

Galloway ('483) teaches (col 5, line 21) that GLP analogs are resistant to the proteolytic action of DPP-IV when the "8" position is substituted with Val, Gly, or *alpha*-methyl-alanine.

In the response filed 4/11/03, it is argued that the references do not suggest administering DPP-IV resistant GLP analogs by pulmonary means. However, each of the primary references (Drucker Smith Knudsen Danley, Kirk) disclose pulmonary administration of GLP peptides. Galloway ('483) GLP analogs that are resistant to the proteolytic action of DPP-IV.

In the response filed 4/11/03, it is argued that the references do not disclose particle sizes, formulations, how to inhale, or the type of device. However, the rejected claims do not impose any such limitations.

In the response filed 4/11/03, it is argued that the cited references do not establish a "reasonable likelihood" that GLP-1 peptides will remain active if administered by pulmonary means. However the references provide the assertion of efficacy. The issue at this point in the discussion is one of obviousness, rather than enablement. No evidence has been presented which establishes that the practitioner of the prior art invention would not

have achieved success. The declaration (paper No. 23) shows evidence of an active peptide for just one GLP-1 analog. The claims are drawn to an essentially limitless array of GLP-1 analogs. Accordingly, whatever "unexpected results" may have been provided do not extend to the entire genus.

In the response filed 4/11/03, it is argued that the cited references merely render the claimed invention "obvious to try". However, the references provide an affirmative recitation of pulmonary administration. The medical practitioner of ordinary skill would know how to achieve pulmonary administration given the suggestion to do so.

In the response filed 4/11/03, it is argued that the examiner's positions with regard to enablement and obviousness are contradictory. However, it can also be said that the arguments in the response (filed 4/11/03) are contradictory. On the one hand, it is implicitly argued that administration of pharmacologically active and intact peptide to the blood via the lung will occur regardless of whether the peptide that is administered contains e.g., 5 amino acids, or 500 amino acids. It is also implicitly argued that any peptide, regardless of sequence or composition will be effective in this regard. These arguments are implicit, since the peptides to which claim 184 are drawn encompass any and all molecular weights, compositions, and sequences. At the same time, the response argues that efficacy is assured regardless of sequence or molecular weight, it is also argued that an affirmative recitation in a published document that specific peptides can be administered to

the lung should be considered non-enabled. However, these two arguments appear not to be consistent. If it is true that the disclosures of the primary references are enabled, but become non-enabled upon combining with the secondary reference, then it would also follow that a substantial portion of the genus of claim 184 is non-enabled. Accordingly, the arguments presented in the response (filed 4/11/03) are not consistent.

The rejection is maintained.

✱

Claims 184-190, 193, 194 are rejected under 35 U.S.C. §103 as being unpatentable over Drucker (USP 5,846,937) in view of Galloway (USP 5,705,483).

As indicated previously, Drucker teaches (col 8, line 50; col 9, line 31) administration of one or more GLP analogs by pulmonary means. Also disclosed (col 9, line 33+) is pulmonary administration of the peptide in the form of an aerosol spray. Also disclosed (col 9, line 33+) is pulmonary administration using a device that provides a "metered amount" of the peptide. Drucker does not teach the analogs of GLP that are described in claim 184.

Galloway ('483) teaches (col 5, line 21) that GLP analogs are resistant to the proteolytic action of DPP-IV when the "8" position is substituted with Val, Gly, or *alpha*-methyl-Alanine. Thus, an artisan of ordinary skill endeavoring to administer the GLP analogs by pulmonary means would have been motivated to use the analogs of Galloway in order to resist degradation by DPP-IV.

In the response filed 4/11/03, it is argued that the references do not disclose particle sizes, or how to inhale. However, the rejected claims do not impose any such limitations.

In the response filed 4/11/03, it is argued that the references do not disclose an aerosol spray or any type of device. However, as indicated above, Drucker teaches both of these.

In the response filed 4/11/03, it is argued that the cited references do not establish a "reasonable likelihood" that GLP-1 peptides will remain active if administered by pulmonary means. However the references provide the assertion of efficacy. The issue at this point in the discussion is one of obviousness, rather than enablement. No evidence has been presented which establishes that the practitioner of the prior art invention would not have achieved success. The declaration (paper No. 23) shows evidence of an active peptide for just one GLP-1 analog. The claims are drawn to an essentially limitless array of GLP-1 analogs. Accordingly, whatever "unexpected results" may have been provided do not extend to the entire genus.

In the response filed 4/11/03, it is argued that the cited references merely render the claimed invention "obvious to try". However, the references provide an affirmative recitation of pulmonary administration. The medical practitioner of ordinary skill would know how to achieve pulmonary administration given the suggestion to do so.

The rejection is maintained.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lukton whose telephone number is 703-308-3213. The examiner can normally be reached Monday-Friday from 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low, can be reached at (703) 308-2923. The fax number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

*D. Lukton* 5/20/03

*Christopher S. F. Low*

CHRISTOPHER S. F. LOW  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600